

**Curriculum Vitae**  
**Prof. Zoltán Trócsányi**

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I was born in Miskolc, Hungary on August 11, 1961. My nationality is Hungarian. I am married and a father of four children (three adults and a minor). My residence is in Debrecen, Hungary. I am a professor of physics at the University of Debrecen, head of the Department of Physics and the Doctoral School in Physics. I am a member of the Roland Eötvös Physical Society, the European Physical Society (EPS) and the High Energy Particle Physics Board of EPS.

**Professional carrier**

**Education:**

- 1980-85: Undergraduate studies in physics at Kossuth University, Debrecen, Hungary.
- 1987-90: Graduate studies in mathematical physics at Virginia Polytechnic Institute & State University, Blacksburg, VA.
- 1990: Theoretical Advanced Study Institute, Boulder, CO. March,
- 1991: Schladming Winter School, Schladming, Austria. July,
- 1993: Erice Summer School, Erice, Sicily.

**Qualifications, titles:**

- 1985: M.Sc. in physics.
- 1990: Ph.D. in mathematical physics.
- 1998: Habilitation in physics at University of Debrecen.
- 2000: D.Sc. in physics.
- 2007: member of the Hungarian Academy of Sciences.

**Fellowships:**

- 1987-88: Fulbright Scholar.
- 1989-90: Cunningham Fellow.
- 1994-95: Universitas Fellow.
- 1995-96: Zoltán Magyary Fellow.
- 1999-2002: Széchenyi Scholar.

**Awards:**

- 1985: First Prize on the National Conference of Hungarian Physics Students
- 2001: Physics Award of the Hungarian Academy of Sciences.
- 2003: Award of the Hungarian Academy of Sciences.
- 2007: Marx György Prize of the Roland Eötvös Physical Society

**Employment:**

- 1985-87: Research assistant at Kossuth University.
- 1987-90: PhD student at Virginia Polytechnic Institute & State University.
- 1991: Teaching assistant at Kossuth University.
- 1992-93: Post doctorand at Eidgenössische Technische Hochschule, Zürich.

1994-96: Senior research associate at Kossuth University  
1997-98: Senior research associate at the Institute of Nuclear Research of the Hungarian Academy of Sciences.  
1998-99: Associate professor at University of Debrecen.  
1999-2000: Research associate at the Theory Division of CERN.  
Current: (from 2000) Professor of physics School at University of Debrecen.

**Mid-term (3–6 months) visits:**

1998: CERN Theory Division, Geneva.  
2006: CERN Theory Division, Geneva.  
2007: University of Zürich, Zürich.  
2010: CERN Theory Division, Geneva.

**Teaching activities:**

General physics, Quantum mechanics, Quantum field theory, Standard Model, Perturbative QCD and History of the Universe university courses at University of Debrecen, University of Zürich and several Hungarian PhD schools. Classical mechanics, Classical electrodynamics and Quantum mechanics exercise sessions at University of Debrecen. Supervisor of 8 MSc (7 finished) and 10 PhD students, four ongoing and six finished: Zoltán Nagy (2000), Beatrix Dienes (2001), Gábor Somogyi (2007), Ádám Kardos (2012), Miklós Kiss (2013), Árpád Horváth (2013). Outreach activities (Hungarian Teachers Program at CERN, CERN masterclasses).

**Research activities:**

Calculation of exact higher-order corrections and power corrections to hadronic final states in perturbative QCD. Analysis of OPAL (QCD studies) and CMS data. Modeling nucleosynthesis of heavy elements in stellar environment.

**Other:**

- Member of the European Committee for Future Accelerators between 2000–2003 and 2007–2010.
- Member of the Advisory Committee for CERN Users (ACCU) from 2000–2006.
- Member of the Hungarian CERN Committee from 2000.
- Member of the Evaluation Committee of the Hungarian Scientific Research Fund (OTKA) between 2000–2003 and from 2007–2010.
- Chairman of the Mathematics-Physics Committee of the Regional Section of the Academy in Debrecen between 2002–2008.
- Member of the Particle Physics Committee of the Physics Section of the Hungarian Academy of Sciences from 1999.
- Member of the Prize Committee of the Roland Eötvös Physical Society between 2004–2012.
- Member of the Hungarian Accrediation Committee from 2007.
- Member of the Local Organizing Committee of the EPSHEP 2001 Conference, Budapest, Hungary.
- Convener of the Hard QCD session of the EPSHEP 2003 Conference, Aachen, Germany.
- Local organizer of the CTEQ-MC net summers school held in August 2008, in Debrecen, Hungary.
- Member of the International Organizing Committee of the EPSHEP 2011 (Grenoble, France) and 2013 (Stockholm, Sweden) Conferences.
- Referee for the journals Computer Physics Communications, Journal of HEP, Nuclear Physics, Physical Review D, Physics Letters.

Summary statistics of scientific publications (on 09.09.2013): 569 research papers and conference proceedings, 1 undergraduate general physics textbook (in Hungarian), 3 dissertations, 4 lecture notes (in Hungarian), 15 outreach articles (in Hungarian). Number of citations in inspire database is 27 125.

# List of Publications since 2008

Prof. Zoltán Trócsányi  
University of Debrecen

Full list of scientific publications can be downloaded from  
[http://inspirehep.net/search?ln=en&p=a+trocsanyi&of=hb&action\\_search=Search](http://inspirehep.net/search?ln=en&p=a+trocsanyi&of=hb&action_search=Search)

## Peer-reviewed articles

### 11 theory publications:

1. V. Del Duca, G. Somogyi and Z. Trócsányi, *Integration of collinear-type doubly unresolved counterterms in NNLO jet cross sections*, JHEP **1306** (2013) 079 [arXiv:1301.3504 [hep-ph]].
2. M. V. Garzelli, A. Kardos, C. G. Papadopoulos and Z. Trócsányi,  *$t\bar{t}W^{+-}$  and  $t\bar{t}Z$  Hadroproduction at NLO accuracy in QCD with Parton Shower and Hadronization effects*, JHEP **1211** (2012) 056 [arXiv:1208.2665 [hep-ph]].
3. M. V. Garzelli, A. Kardos, C. G. Papadopoulos and Z. Trócsányi,  *$Z0$  - boson production in association with a top anti-top pair at NLO accuracy with parton shower effects*, Phys. Rev. D **85** (2012) 074022 [arXiv:1111.1444 [hep-ph]].
4. M. Kiss and Z. Trócsányi, *Phenomenological description of neutron capture cross sections at 30 keV*, ISRN Astron. Astrophys. **2013** (2013) 170954 [arXiv:1104.0209 [nucl-ex]].
5. A. Kardos, Z. Trócsányi and C. Papadopoulos, *Top quark pair production in association with a Z-boson at NLO accuracy*, Phys. Rev. D **85** (2012) 054015 [arXiv:1111.0610 [hep-ph]].
6. M. V. Garzelli, A. Kardos, C. G. Papadopoulos and Z. Trócsányi, *Standard Model Higgs boson production in association with a top anti-top pair at NLO with parton showering*, Europhys. Lett. **96** (2011) 11001 [arXiv:1108.0387 [hep-ph]].
7. A. Kardos, C. Papadopoulos and Z. Trócsányi, *Top quark pair production in association with a jet with NLO parton showering*, Phys. Lett. B **705** (2011) 76 [arXiv:1101.2672 [hep-ph]].
8. P. Bolzoni, G. Somogyi and Z. Trócsányi, *A subtraction scheme for computing QCD jet cross sections at NNLO: integrating the iterated singly-unresolved subtraction terms*, JHEP **1101** (2011) 059 [arXiv:1011.1909 [hep-ph]].
9. P. Bolzoni, S. -O. Moch, G. Somogyi and Z. Trócsányi, *Analytic integration of real-virtual counterterms in NNLO jet cross sections. II.*, JHEP **0908** (2009) 079 [arXiv:0905.4390 [hep-ph]].
10. U. Aglietti, V. Del Duca, C. Duhr, G. Somogyi and Z. Trócsányi, *Analytic integration of real-virtual counterterms in NNLO jet cross sections. I.*, JHEP **0809** (2008) 107 [arXiv:0807.0514 [hep-ph]].
11. G. Somogyi and Z. Trócsányi, *A Subtraction scheme for computing QCD jet cross sections at NNLO: Integrating the subtraction terms. I.*, JHEP **0808** (2008) 042 [arXiv:0807.0509 [hep-ph]].

**8 OPAL publications:** G. Abbiendi *et al.*

12. *Search for Charged Higgs bosons: Combined Results Using LEP Data*, Eur. Phys. J. C **73** (2013) 2463 [arXiv:1301.6065 [hep-ex]].
13. *Determination of  $\alpha_s$  using OPAL hadronic event shapes at  $\sqrt{s} = 91 - 209$  GeV and resummed NNLO calculations*, Eur. Phys. J. C **71** (2011) 1733 [arXiv:1101.1470 [hep-ex]].
14. *Sigma- - antihyperon correlations in  $Z(0)$  decay and investigation of the baryon production mechanism*, Eur. Phys. J. C **64** (2009) 609 [arXiv:0910.2174 [hep-ex]].
15. *Search for Charged Higgs Bosons in  $e^+e^-$  Collisions at  $\sqrt{s} = 189 - 209$  GeV*, Eur. Phys. J. C **72** (2012) 2076 [arXiv:0812.0267 [hep-ex]].
16. *Measurement of  $\alpha(s)$  with radiative hadronic events*, Eur. Phys. J. C **53** (2008) 21.
17. *Search for Dirac magnetic monopoles in  $e+e-$  collisions with the OPAL detector at LEP2*, Phys. Lett. B **663** (2008) 37 [arXiv:0707.0404 [hep-ex]].
18. *Search for invisibly decaying Higgs bosons in  $e+ e- \rightarrow Z0 h0$  production at  $s^{**}(1/2) = 183$ -GeV - 209-GeV*, Phys. Lett. B **682** (2010) 381 [arXiv:0707.0373 [hep-ex]].
19. *Inclusive Jet Production in Photon-Photon Collisions at  $s(ee)^{**}(1/2)$  from 189 to 209-GeV*, Phys. Lett. B **658** (2008) 185 [arXiv:0706.4382 [hep-ex]].

**262 CMS publications:** V. Khachatryan *et al.*, or S. Chatrchyan *et al.*

20. *Study of exclusive two-photon production of  $W(+)$  $W(-)$  in  $pp$  collisions at  $\sqrt{s} = 7$  TeV and constraints on anomalous quartic gauge couplings*, JHEP **1307** (2013) 116 [arXiv:1305.5596 [hep-ex]].
21. *Search for gluino mediated bottom- and top-squark production in multijet final states in  $pp$  collisions at 8 TeV*, Phys. Lett. B **725** (2013) 243 [arXiv:1305.2390 [hep-ex]].
22. *Multiplicity and transverse momentum dependence of two- and four-particle correlations in  $pPb$  and  $PbPb$  collisions*, Phys. Lett. B **724** (2013) 213 [arXiv:1305.0609 [nucl-ex]].
23. *Measurement of the  $\Lambda_b^0$  lifetime in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **07** (2013) 163 [arXiv:1304.7495 [hep-ex]].
24. *Measurement of masses in the  $t\bar{t}$  system by kinematic endpoints in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **73** (2013) 2494 [arXiv:1304.5783 [hep-ex]].
25. *Search for a standard-model-like Higgs boson with a mass in the range 145 to 1000 GeV at the LHC*, Eur. Phys. J. C **73** (2013) 2469 [arXiv:1304.0213 [hep-ex]].
26. *Search for microscopic black holes in  $pp$  collisions at  $\sqrt{s} = 8$  TeV*, JHEP **1307** (2013) 178 [arXiv:1303.5338 [hep-ex]].
27. *Studies of jet mass in dijet and  $W/Z + jet$  events*, JHEP **1305** (2013) 090 [arXiv:1303.4811 [hep-ex]].
28. *Observation of a new boson with mass near 125 GeV in  $pp$  collisions at  $\sqrt{s} = 7$  and 8 TeV*, JHEP **06** (2013) 081 [arXiv:1303.4571 [hep-ex]].
29. *A New Boson with a Mass of 125 GeV Observed with the CMS Experiment at the Large Hadron Collider*, Science **338** (2012) 1569.
30. *Measurement of associated production of vector bosons and top quark-antiquark pairs at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **110** (2013) 172002 [arXiv:1303.3239 [hep-ex]].

31. *Search for the standard model Higgs boson produced in association with a top-quark pair in pp collisions at the LHC*, JHEP **1305** (2013) 145 [arXiv:1303.0763 [hep-ex]].
32. *Measurement of the  $X(3872)$  production cross section via decays to  $J/\psi \pi \pi$  in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1304** (2013) 154 [arXiv:1302.3968 [hep-ex]].
33. *Search for a Higgs boson decaying into a b-quark pair and produced in association with b quarks in proton-proton collisions at 7 TeV*, Phys. Lett. B **722** (2013) 207 [arXiv:1302.2892 [hep-ex]].
34. *Search for new physics in final states with a lepton and missing transverse energy in pp collisions at the LHC*, Phys. Rev. D **87** (2013) 072005 [arXiv:1302.2812 [hep-ex]].
35. *Study of the underlying event at forward rapidity in pp collisions at  $\sqrt{s} = 0.9, 2.76,$  and 7 TeV*, JHEP **1304** (2013) 072 [arXiv:1302.2394 [hep-ex]].
36. *Searches for Higgs bosons in pp collisions at  $\sqrt{s} = 7$  and 8 TeV in the context of four-generation and fermiophobic models*, Phys. Lett. B **725** (2013) 36 [arXiv:1302.1764 [hep-ex]].
37. *Search for pair-produced dijet resonances in four-jet final states in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **110** (2013) 141802 [arXiv:1302.0531 [hep-ex]].
38. *Measurement of the  $t \bar{t}$  production cross section in the all-jet final state in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1305** (2013) 065 [arXiv:1302.0508 [hep-ex]].
39. *Measurement of the top-antitop production cross section in the  $\tau$ +jets channel in pp collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **73** (2013) 2386 [arXiv:1301.5755 [hep-ex]].
40. *Search for contact interactions using the inclusive jet  $p_T$  spectrum in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 052017 [arXiv:1301.5023 [hep-ex]].
41. *Measurement of  $W^+W^-$  and  $ZZ$  production cross sections in pp collisions at  $\sqrt{s} = 8$  TeV*, Phys. Lett. B **721** (2013) 190 [arXiv:1301.4698 [hep-ex]].
42. *Search for physics beyond the standard model in events with  $\tau$  leptons, jets, and large transverse momentum imbalance in pp collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **73** (2013) 2493 [arXiv:1301.3792 [hep-ex]].
43. *Event shapes and azimuthal correlations in  $Z +$  jets events in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **722** (2013) 238 [arXiv:1301.1646 [hep-ex]].
44. *Search for supersymmetry in events with opposite-sign dileptons and missing transverse energy using an artificial neural network*, Phys. Rev. D **87** (2013) 072001 [arXiv:1301.0916 [hep-ex]].
45. *Search for supersymmetry in pp collisions at  $\sqrt{s} = 7$  TeV in events with a single lepton, jets, and missing transverse momentum*, Eur. Phys. J. C **73** (2013) 2404 [arXiv:1212.6428 [hep-ex]].
46. *Study of the Mass and Spin-Parity of the Higgs Boson Candidate Via Its Decays to Z Boson Pairs*, Phys. Rev. Lett. **110** (2013) 081803 [arXiv:1212.6639 [hep-ex]].
47. *Measurements of differential jet cross sections in proton-proton collisions at  $\sqrt{s} = 7$  TeV with the CMS detector*, Phys. Rev. D **87** (2013) 112002 [arXiv:1212.6660 [hep-ex]].
48. *Measurement of the  $t\bar{t}$  production cross section in pp collisions at  $\sqrt{s} = 7$  TeV with lepton + jets final states*, Phys. Lett. B **720** (2013) 83 [arXiv:1212.6682].
49. *Inclusive search for supersymmetry using the razor variables in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **111** (2013) 081802 [arXiv:1212.6961 [hep-ex]].

50. *Search for new physics in events with same-sign dileptons and  $b$  jets in  $pp$  collisions at  $\sqrt{s} = 8$  TeV*, JHEP **1303** (2013) 037 [Erratum-ibid. **1307** (2013) 041] [arXiv:1212.6194 [hep-ex]].
51. *Search for heavy narrow dilepton resonances in  $pp$  collisions at  $\sqrt{s} = 7$  TeV and  $\sqrt{s} = 8$  TeV*, Phys. Lett. B **720** (2013) 63 [arXiv:1212.6175 [hep-ex]].
52. *Search for contact interactions in  $\mu^+\mu^-$  events in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 3, 032001 [arXiv:1212.4563 [hep-ex]].
53. *Search for exotic resonances decaying into  $WZ/ZZ$  in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1302** (2013) 036 [arXiv:1211.5779 [hep-ex]].
54. *Measurement of the  $ZZ$  production cross section and search for anomalous couplings in 2  $|2l'$  final states in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1301** (2013) 063 [arXiv:1211.4890 [hep-ex]].
55. *Search for new physics in events with photons, jets, and missing transverse energy in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1303** (2013) 111 [arXiv:1211.4784 [hep-ex]].
56. *Identification of  $b$ -quark jets with the CMS experiment*, JINST **8** (2013) P04013 [arXiv:1211.4462 [hep-ex]].
57. *Search for  $Z'$  resonances decaying to  $t\bar{t}$  in dilepton+jets final states in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 072002 [arXiv:1211.3338 [hep-ex]].
58. *Search for supersymmetry in final states with a single lepton,  $b$ -quark jets, and missing transverse energy in proton-proton collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 052006 [arXiv:1211.3143 [hep-ex]].
59. *Search in leptonic channels for heavy resonances decaying to long-lived neutral particles*, JHEP **1302** (2013) 085 [arXiv:1211.2472 [hep-ex]].
60. *Measurement of differential top-quark pair production cross sections in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **73** (2013) 2339 [arXiv:1211.2220 [hep-ex]].
61. *Search for supersymmetry in final states with missing transverse energy and 0, 1, 2, or at least 3  $b$ -quark jets in 7 TeV  $pp$  collisions using the variable  $\alpha_T$* , JHEP **1301** (2013) 077 [arXiv:1210.8115 [hep-ex]].
62. *Measurement of the sum of  $WW$  and  $WZ$  production with  $W$ +dijet events in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **73** (2013) 2283 [arXiv:1210.7544 [hep-ex]].
63. *Search for heavy quarks decaying into a top quark and a  $W$  or  $Z$  boson using lepton + jets events in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1301** (2013) 154 [arXiv:1210.7471 [hep-ex]].
64. *Measurement of the inelastic proton-proton cross section at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **722** (2013) 5 [arXiv:1210.6718 [hep-ex]].
65. *Search for pair production of third-generation leptoquarks and top squarks in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **110** (2013) 081801 [arXiv:1210.5629 [hep-ex]].
66. *Search for third-generation leptoquarks and scalar bottom quarks in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1212** (2012) 055 [arXiv:1210.5627 [hep-ex]].
67. *Observation of long-range near-side angular correlations in proton-lead collisions at the LHC*, Phys. Lett. B **718** (2013) 795 [arXiv:1210.5482 [nucl-ex]].

68. *Observation of Z decays to four leptons with the CMS detector at the LHC*, JHEP **1212** (2012) 034 [arXiv:1210.3844 [hep-ex]].
69. *Search for excited leptons in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **720** (2013) 309 [arXiv:1210.2422 [hep-ex]].
70. *Search for heavy neutrinos and W[R] bosons with right-handed couplings in a left-right symmetric model in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **109** (2012) 261802 [arXiv:1210.2402 [hep-ex]].
71. *Search for narrow resonances and quantum black holes in inclusive and b-tagged dijet mass spectra from pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1301** (2013) 013 [arXiv:1210.2387 [hep-ex]].
72. *Search for fractionally charged particles in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 092008 [arXiv:1210.2311 [hep-ex]].
73. *Search for supersymmetry in events with photons and low missing transverse energy in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **719** (2013) 42 [arXiv:1210.2052 [hep-ex]].
74. *Search for heavy lepton partners of neutrinos in proton-proton collisions in the context of the type III seesaw mechanism*, Phys. Lett. B **718** (2012) 348 [arXiv:1210.1797 [hep-ex]].
75. *Measurement of the relative prompt production rate of  $\chi(c2)$  and  $\chi(c1)$  in pp collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **72** (2012) 2251 [arXiv:1210.0875 [hep-ex]].
76. *Search for anomalous production of highly boosted Z bosons decaying to dimuons in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **722** (2013) 28 [arXiv:1210.0867 [hep-ex]].
77. *Search for electroweak production of charginos and neutralinos using leptonic final states in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1211** (2012) 147 [arXiv:1209.6620 [hep-ex]].
78. *Measurement of the single-top-quark t-channel cross section in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1212** (2012) 035 [arXiv:1209.4533 [hep-ex]].
79. *Search for resonant  $t\bar{t}$  production in lepton+jets events in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1212** (2012) 015 [arXiv:1209.4397 [hep-ex]].
80. *Search for the standard model Higgs boson produced in association with W and Z bosons in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1211** (2012) 088 [arXiv:1209.3937 [hep-ex]].
81. *Search for a narrow spin-2 resonance decaying to a pair of Z vector bosons in the semileptonic final state*, Phys. Lett. B **718** (2013) 1208 [arXiv:1209.3807 [hep-ex]].
82. *Evidence for associated production of a single top quark and W boson in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **110** (2013) 022003 [arXiv:1209.3489 [hep-ex]].
83. *Measurement of the Y1S, Y2S and Y3S polarizations in pp collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **110** (2013) 081802 [arXiv:1209.2922 [hep-ex]].
84. *Measurement of the top-quark mass in  $t\bar{t}$  events with dilepton final states in pp collisions at  $\sqrt{s} = 7$  TeV*, Eur. Phys. J. C **72** (2012) 2202 [arXiv:1209.2393 [hep-ex]].
85. *Measurement of the top-quark mass in  $t\bar{t}$  events with lepton+jets final states in pp collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1212** (2012) 105 [arXiv:1209.2319 [hep-ex]].
86. *Observation of a diffractive contribution to dijet production in proton-proton collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **87** (2013) 012006 [arXiv:1209.1805 [hep-ex]].

87. *Search for exclusive or semi-exclusive photon pair production and observation of exclusive and semi-exclusive electron pair production in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1211** (2012) 080 [arXiv:1209.1666 [hep-ex]].
88. *Combined search for the quarks of a sequential fourth generation*, Phys. Rev. D **86** (2012) 112003 [arXiv:1209.1062 [hep-ex]].
89. *Search for pair produced fourth-generation up-type quarks in  $pp$  collisions at  $\sqrt{s} = 7$  TeV with a lepton in the final state*, Phys. Lett. B **718** (2012) 307 [arXiv:1209.0471 [hep-ex]].
90. *Search for supersymmetry in events with  $b$ -quark jets and missing transverse energy in  $pp$  collisions at 7 TeV*, Phys. Rev. D **86** (2012) 072010 [arXiv:1208.4859 [hep-ex]].
91. *Study of the dijet mass spectrum in  $pp \rightarrow W+$  jets events at  $\sqrt{s} = 7$  TeV*, Phys. Rev. Lett. **109** (2012) 251801 [arXiv:1208.3477 [hep-ex]].
92. *Search for three-jet resonances in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **718** (2012) 329 [arXiv:1208.2931 [hep-ex]].
93. *Observation of sequential Upsilon suppression in PbPb collisions*, Phys. Rev. Lett. **109** (2012) 222301 [arXiv:1208.2826 [nucl-ex]].
94. *Measurement of the  $t\bar{t}$  production cross section in the dilepton channel in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, JHEP **1211** (2012) 067 [arXiv:1208.2671 [hep-ex]].
95. *Measurement of the azimuthal anisotropy of neutral pions in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV*, Phys. Rev. Lett. **110** (2013) 042301 [arXiv:1208.2470 [nucl-ex]].
96. *Search for flavor changing neutral currents in top quark decays in  $pp$  collisions at 7 TeV*, Phys. Lett. B **718** (2013) 1252 [arXiv:1208.0957 [hep-ex]].
97. *Search for a  $W'$  boson decaying to a bottom quark and a top quark in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **718** (2013) 1229 [arXiv:1208.0956 [hep-ex]].
98. *Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC*, Phys. Lett. B **716** (2012) 30 [arXiv:1207.7235 [hep-ex]].
99. *Search for heavy Majorana neutrinos in  $\mu^+\mu^+[\mu^-\mu^-]$  and  $e^+e^+[e^-e^-]$  events in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Lett. B **717** (2012) 109 [arXiv:1207.6079 [hep-ex]].
100. *Search for pair production of first- and second-generation scalar leptoquarks in  $pp$  collisions at  $\sqrt{s} = 7$  TeV*, Phys. Rev. D **86** (2012) 052013 [arXiv:1207.5406 [hep-ex]].
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